From: "Joe DiGiorgio" <DiGiorgioJB@ecologic-eng.com>
To: "Jim Martin" <jmartin@waterboards.ca.gov>
Date: 4/15/2008 5:14 PM
Subject: CV-SALTS Revised Draft Economic Impact Study Report Initial Comments

Jim,

We have the following comments regarding the Revised CV-SALTS Economic Study Report as currently drafted.

1. Section 3.1 appears to underestimate the salt concentrating effects of agriculture and overestimates the salt load from domestic sources. We suggest it is appropriate for the TAC to carefully review the assumptions to be used for model inputs if the model is expected to produce informative results. To our knowledge this hasn't happened. In fact, there is a large change in agricultural salt load impacts presented in the report [ie, Figures 3.1.1 and 2] from similar figures presented in the economics committee meetings last year.

2. Section 3.1.1 refers to Schoups (2005) to apparently justify the agricultural salt load reduction from earlier assumptions. The report states that the Schoups study hypothesis is that "irrigation water salt loads are offset by deep percolation and lateral flows". Our reading of the Schoups study reads that statement as a limitation in their mathematic model only, NOT as saying there will not be impacts to groundwater beneficial usage from those "offsets". The final sentence of the Schoups study abstract says..."Although results show that the total salt input were about equal for the last 20 years, the model also predicts salinization of the deeper aquifers, thereby questioning the sustainability of irrigated agriculture". Similar quotes in the article text are even stronger The economic study, as it is written, appears to discount this accumulation.

We would be surprised if the Regional Board agrees with the above impact assumption that deep percolation to potable and irrigation water aquifers is essentially an acceptable salt storage strategy, with little economic impact to beneficial users. It would appear to be contrary to WDR degradation assessment and enforcement policy to date; although the recently released State Board DRAFT recycled water policy findings echo that approach, but then, only until the Regional Boards develop a salinity management plan.

3. Section 3.1.1 briefly talks about a second approach based on the salt in the applied irrigation water but discounts the validity by suggesting the results of that approach could be skewed if output concentrations aren't correctly assessed. That may be correct, and a problem if it is necessary to measure and model impacts on a parcel by parcel basis. However we expect the data to make an empirical assessment, and the relative impacts of non-agricultural sources, on an aggregate basis probably already exists. It would require major reservoir and CVP/SWP salt data [upstream data], downstream river data at all the major river junctions and delta, estimates of land under irrigation and irrigation volumes, and NPDES monitoring data for municipal/commercial and industrial discharges.

We believe the TAC should suggest which model/assessment should be used for input in the economic model....and those assumptions should be applied consistently to agriculture and municipal, as discussed in point 4 below.

4. Table 3.1.2 attempts to project domestic and commercial salt loads. We have not checked the population numbers but only those populations in the CV watershed should be included. The standard of 350

ppm incremental TDS estimate was originally developed to apply to the wastewater production of about 100 gallons/person/day that was typical at the time. Now, with wide spread use of water conserving fixtures, the wastewater flow [for our central valley clients] are typically around 60-80 gallons/person/day. The pounds of salt per person hasn't appreciably changed so the incremental TDS figure is more like 400-500 ppm. [About 0.3 lbs/person/day].

Table 3.1.2 calculates the salt load then on the gross water use and the sum of the Inflow and Incremental TDS, or 550 mg/l to arrive at the salt load. If the inflow TDS is to be applied to domestic/commercial use it should also be applied to agricultural uses. Are we talking about loads or accumulations?? If accumulations then, like agriculture, one would need to subtract the exports [ie "deep percolation" or the ocean??] .

As discussed in point 3 above, we believe the TAC should suggest which model/assessment should be used for input in the economic model....and those assumptions should be applied consistently to agriculture and municipal.

5. Regarding Table 3.19 and Figures 3.1.1 and 3.1.2 [is Sacramento Basin figure missing??]. We would expect the irrigated crops accumulations to go down if the model figures crop land will be lost to either salinity or urban development. As that is something already occurring we would expect it to be considered in proportion to acres lost, or water applied.

6. Section 3.2 Urban Water costs

We would expect the costs for increases in TDS are not linear as water is generally more corrosive at lower TDS, which also has a cost.

Data we have seen [2007 Report by LWA for LACSD] shows little correlation between source water TDS and the difference in TDS between source water and treated wastewater. Which implies softener usage doesn't correlate with source water TDS. Perhaps source water hardness vs.. incremental fixed solids may have shown a correlation.

A major urban cost not even discussed is the cost for municipal treatment to meet current Regional Board salinity requirements, to say nothing about future requirements. These potential costs dwarf anything quantified in this section of the report. [$20-$100/MONTH/household is within the range of costs we see for funding water and wastewater projects that address salinity to the extent Board staff has indicated would be required to meet a consistent application of current salinity discharge regulations]

7. It is unclear if the report applies urban and agricultural costs to the entire population/areas of the basins or just the areas subject to increased salt concentrations. For example, users who get their source water from east side of the valley are relatively unaffected directly by increased salinity downstream. [Unless the costs relate to increased treatment costs on their discharges]

8. It may be instructive in section 5 to show a map of the central valley, maybe by coded by county, showing where the loads and costs are distributed. The aggregated pie chart data may be too simplistic to draw appropriate conclusions and/or formulate actions. Is it possible to include a time chart of salt accumulations and costs from present -2030 to illustrate the trends?

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